USE OF E-JOURNALS BY THE PG STUDENTS IN THE FACULTY OF MEDICINE, AMU, ALIGARH: A SURVERY

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Dedicated to
My Loving Parents
And
Family Members

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CERTIFICATE

This is to certify that **Mr. Salahudheen. E** has completed his dissertation entitled ***"Use of E-journals by the PG Students in the Faculty of Medicine, AMU, Aligarh: A Survey"*** in partial fulfilment of the requirements for the award of the degree of ***Master of Library and Information Science (2008-09).*** He has conducted the work under my supervision and guidance.

I deem it fit for submission.

Syed Mustafa K. Q. Zaidi
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'Say: "O Allah, Lord of all dominion! You give dominion to whom You will, and take away dominion from whom You will, and You exalt whom You will, and abase whom You will. In Your Hand is all good. Surely You are All-Power-full."'

(Holy Qur'an 3:26)

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LIST OF ABBREVIATIONS

AHSLC	Atlanta Health Sciences Library Consortium
AIP	American Institute of Physics
AMU	Aligarh Muslim University
APS	American Physical Society
BBS	Bulletin Board System
BMJ	British Medical Journals
CD-ROM	Compact Disk Read Only Memory
CSIR	Council of Scientific and Industrial Research
EP	Electronic Publishing
FORSA	Forum for Resource Sharing in Astronomy & Astrophysics
FTP	File Transfer Protocol
HELINET	Health Sciences Library & Information Network
HTML	Hyper Text Markup Language
ICOLC	International Coalition of Library Consortia
IEEE	Institute of Electrical and Electronics Engineering
INDEST	Indian National Digital Library in Engineering Science and Technology
IT	Information Technology
IUCAA	Inter University Center for Astronomy and Astrophysics
JCCC	J-Gate Custom Content Consortium
NLM	National Library of Medicine
PDF	Portable Document Format
STM	Science, Technology and Medicine
TQEHL	The Queen Elizabeth Hospital Library
UGC	University Grants Commission
WAIS	Wide Area Information System
WRLC	Washington Research Library Consortium
WWW	World Wide Web

Chapter 1

Introduction

INTRODUCTION

The history of mankind has witnessed three revolutions and it is on the threshold of the fourth. The first two, emergence of language and advent of writing, took place thousands of years ago. The third revolution with the invention of printing press took place in our own millennium. The internet, World Wide Web (WWW) and Electronic Publishing (EP) represent the fourth revolution and seems to have humbled monopoly of printed artifacts as sole medium of scholarly communication. The revolution has just begun and is going under the process of adaptation, which would take its own time.[1]

Journals are the primary sources of information published with certain periodicity. In these days they are considered to be a major source of communication of nascent thought. Many aspects of publishing are being transformed by the arrival of WWW and its facility of electronic publishing. For Journals the transformation has just begun. Electronic journals, often abbreviated as e-journals, are the periodical literatures that are made available as individual titles via electronic medium, typically WWW. They constitute an important part of electronic publishing. E-journals for all practical purposes may be defined as those Journals which are available in electronic media, some may be available in CD-ROM, a few may be available in both electronic media and print. A large number of journals are now available in electronic form of some kind but otherwise title has changed. They represent an important experiment in scholarly communication today. For libraries, e-journals form a cost effective alternative to commercial publications.[2]

1.1 ELECTRONIC PUBLISHING (EP)

The publishing world has undergone a sea change as more and more publications are becoming web centered. Technological revolution and information explosion has changed the contemporary outlook towards the functioning of libraries and information centers. The library environment is rapidly changing to electronic environment. The physical hard volumes are slowly replaced by electronic media like magnetic tapes, CD-ROMs, DVDs, etc. To cope up with these changes, the publishers, LICs and users have opted Electronic Publishing (EP).

Electronic Publishing is a new concept in the world, which implies that the information technology has been used for generating, processing and disseminating the information to its users. In general, it is used to mean any information sources published in electronic form. The ultimate goal of electronic publishing is to provide fast and easy access to the information contained in the objective publications with simple powerful and retrieval capabilities.

E-Publishing is the process for production of typeset quality documents containing text, graphics, pictures, tables, equations, etc. EP can be represented as EP = Electronic technology + Computer technology + Communication technology + Publishing. Electronic publishing information is to be viewed electronically or online. Such information is delivered via electronic books, CD-ROMs or over WWW. If someone creates a website, that person is engaging in electronic publishing. Hence EP is the process of making available electronic access to documents.. The electronic publishing have the following seven steps namely, writing, editing, organization, production, storage, selling and delivery. The synonym for EP is computer aided publishing or computer assisted publishing.[3]

According to F. W. Lancaster, "Electronic Publishing is a publication process where the manuscripts are submitted in electronic format, edited, printed and even distributed to readers in electronic form by employing computers and telecommunication technologies". [4]

According to Kist, E-Publishing is "The application by publishers of a computer- aided process, by which they find, capture, shape, store and update information content in order to disseminate it to selected audience" [5].

In brief, the process of creating and disseminating information via electronic means including e-mail and via the web is electronic publishing. Electronically published materials may originate as traditional paper publishing or may be created specifically for EP.

1.2 TAXONOMY OF ELECTRONIC PUBLISHING

The electronic publishing technology can be classified into two broad categories namely,

(i) E-Publishing using CD-ROM

(ii) E-Publishing on net.

1.2.1 E-Publishing using CD-ROM: CD-ROM has provided new dimensions for information storage and retrieval. In the electronic publishing using CD-ROM, publishers deliver physical commodity in which publisher's work is embodied. The publishing information mainly abstracting sources are common in CD-ROM.

1.2.2 E-Publishing on Net: Online publishing does not require the physical delivery of any commodity or client to the publishers. It creates an opportunity for the publishers, authors or editors, readers to be on a constant dialogue electronically. It does not necessarily deprive the publishers from the opportunity to create a visual identification in the minds of the reader. Some of the advantages of internet-based E-Publishing include: (i) Provides speed search (ii) User can instantly adopt his request through search engines[6].

1.3 FORMS OF E-PUBLISHING

Electronic publishing has text, graphics, images, sound and video in a multimedia format. Technical tools for the production of EP are powerful and has large installed base. Copies of e-documents are equal or better than the original without any loss of quality. E-documents are tied with the development in the technology in terms of maintenance and preservation. These documents can be distributed over the net, which is equal to having the document at every place. The major forms of e-publishing are CD-ROM, E-Books, Floppy, Databases, Multi media documents, Internet resources, Bulletin Board System and E-journals.

1.3.1 Electronic Books: An electronic book can be any type of e-content that is packaged as a discrete unit and can be used with e-book technology. It is a written work readable on a computer screen, downloaded to a PC or digital

assistant or placed on a reader designed for that purpose, i.e. professionally produced and edited text available in an e-format. E-books are changing the fundamental of reading. They are becoming a significant, enduring part of culture, society and the life of minds. They would be a viable product for academic use as an added functionality over print versions. Standards for e-books are still in development and currently different e-books software packages use different standards. The elements that are considered as important for the use of e-books are their content, software and hardware standards, digital rights management access, archiving and privacy[7].

1.3.2 Electronic Databases: A database is an organized collection of data in a specific field. With the emergence of computers and communication technologies, the strength of information system in the development of modern databases has become a large segment of electronic publishing that provides a base for procedures such as retrieving information, drawing conclusions, and making decisions. The holding of library databases consisting of books, periodicals, reports, and theses can be converted into electronic form that allows access for public use through digital networks. Nowadays, various electronic publishers account for publishing information, both bibliographic and full text on CD-ROMs as well as making them available for online retrieval[8]

1.3.3 CD- ROM (Compact Disc Read Only Memory): CD-ROM technology is hardly a decade old, extending into wide areas of information storage and retrieval. "The CD-ROM consists of a polycarbonate substrate on which the data are recorded as series of pits and flats which represents IS and OS in magnetic media". The laser beams are used to record the data on the surface on the disc. The data get stored in a digital of pits and lands squeezed inside a spiraling groove only a micron wide that extends from the inside of the disc to the outside edge. A thin reflective layer coats the back of disc to reflect the laser beam. The CD-ROM discs are now available in different size like 4.72 inches and 3.5 inches.

1.3.4 Multimedia Documents/resources: Multimedia refers to the integration of multiple media - such as visual imaging, text, video and sound and animation

in one level. On another level interactive multimedia refers to the ability of the users to control these components and interact with as needed. Multimedia is the convergence of computer and communication technology. It refers to the use of several types of media which integrates text, voice processing, film, picture graphics, animation etc. Multimedia has become the latest cultural phenomena and the thirst for the multimedia system for basic information on digital media is increasing day by day.

1.3.5 Web Resources: The Internet is literally becoming a lifeline for people. It is changing the notion of the library from a closed place to virtual library e.g. library without walls. It is one of the most important and complex innovations of the mankind. The Internet is a large number of computers connected to the largest network and complete tool for information exchange at the global level.

The Internet is the greatest single factor in recent years which has changed and is further changing society starting with basic tools like e-mail, file Transfer protocol (FTP), remote login (Telnet) to user friendly tools like WAIS and WWW for information publishing and accessing. Internet has emerged as the core and foundation of the information infrastructure.

1.3.6 Bulletin Board System (BBS): Bulletin Board system is a miniature form of an online system for a cost effective distribution of information in electronic format. BBS supports interactive communication between users on a wide variety of a subject ranging from hobbies to politics. Some bulletin boards are considered more of a talk net than a platform to exchange research information.

Bulletin Board system is vital tool for computer mediated communication among computer users. These are similar to the bulletin boards that are displayed in a library. However these are operated electronically on computer networks[9].

1.4 ELECTRONIC JOURNALS

The recent developments in information technology have changed the world scenario. Each and every aspect of human society has been affected by IT revolution. Nowadays, the publishing industry is switching over from print to electronic media. Any journal which is available in electronic or computerized form on the internet or on CD-ROM is known as electronic journals or e-journals. Electronic journals are more helpful for distance learners and higher education.

An e-journal may be defined vary broadly as any journal, magazine, newsletter, or type of electronic serial publication, which is available over the internet. The title can be accessed using different technologies such as WWW. Electronic journals are mostly available via the web.

An e-journal contains scholarly articles, processed, published and made available through electronic media. It is also known as virtual, paperless or online journals.

1.4.1 DEFINITIONS OF E-JOURNALS

There is no universally accepted definition of e-journals. Different people might have a term or understanding of the term 'Electronic Journals'. Some of the definitions given by experts in the field are discussed below.

According to ALA Glossary (1983)[10] "A journal is a periodical especially one containing scholarly articles or disseminating current information on research and development in a particular subject fields. If this task is done by electronic media then it may be called e-journals."

According to David Pullinger and Brian Schkel (1990)[11] e-journal is "one whose text input may be entered directly by a computer or by other file transfer mechanisms in a machine readable form, whose editorial processing is facilitated by a computer and whose article are thus made available in electronic form to readers".

According to McMillan (1991) an electronic journals is defined as "any serial produced, published, distributed... via electronic networks such as Bitnet and Internet".

Lancaster (1995)[12] opined that "an electronic journal is created for the electronic medium and is available only in this medium. In general a journal that is available in electronic form through online host is called e-journal."

Ravi Chandra Rao (2002)[13] defined e-journals as "those journals which are available in electronic media; some may be available on CD-ROM; a few may be available only on online; some may be available both in electronic media and in print".

According to Glossary of Library and information science (2004) "an electronic journal is a publication, often scholarly, that is made accessible in a computerized format and distributed over the Internet."

1.4.2 HISTORY AND DEVELOPMENT

The first scientific journal was published in January 1665. It was published from Paris in the name 'Le Journal De Scavants'. With the advances in technology, from the printing technology yet another media namely, the electronic media was developed and e-journal is the bi-product of this technology. E-journals appeared in the 1970s and they got popularized by 1996.

Vannever Bush First described the "e-journals" in 1967 as a part of MEMAX proposal. Before that on this matter - UNESCO took a project in 1967 to test networking computer as means of improving scientific communication. Their first product was published in the form of an e-journal in 1980 named 'MENTAL WORKDOAD.' The first prototype and e-journal named 'CHIMO' was published in 1976 by the New Jersey institute of Technology. The first peer reviewed electronic, full text e-journal including graphics was OJCCT. In recent years, a large number of online journals have been launched which have no print version at all. The Royal Society of Chemistry, UK has also started a new series of journals, which are available in electronic form only. The Journal of

Chemistry Education has been made available on electronic form as JCE Internet. The Institute of Electrical and Electronics Engineering (IEEE) encodes all journals. It is published in mark up language for online viewing. The Elsevier science publishers have launched science direct to extend web access to more than 1,100 journals published by them. American Institute of Physics (AIP) offers online version to many of its journals. American Physical Society (APS) makes electronic version of its journals available on the Internet at no additional cost of the print version subscribes. Many important journals such as Nature Online, Science Online, New England Journals of Medicine, British Medical Journals (BMJ) etc. are also available online.

Today a number of e-journals are available in the field of medicine also, which play a very important role in medical and health care. MEDLINE, a database by the National Library of Medicine (NLM), USA contains bibliographic citations and abstracts from more than 4,800 bio-medical e-journals. IndMED, a database designed by NIC, New Delhi provides access to more than 200 prominent bio-medical Indian journals. Besides these, a number of medical databases which cover a large number of full text e-journals are available such as Free Medical Journals Online, BMJ Journals Online, MedBio World, Blackwell Synergy, JAMA and Archives Journals Online, Ingenta, Science Direct, etc. [14]

1.4.3 NEED FOR E-JOURNALS

There are many reasons why one should now consider a partial shift away from the use of conventional paper based journals to the great use of publications that are based on the use of electronic media. The following are the factors for which e-journals are needed.

- Need to support parallel support and electronic methods of knowledge dissemination.
- Information needed by faculty and student is increasing exponentially in sciences.
- Interdisciplinary research has increased the scientists' need for new information.

- With the new technologies, academics can distribute their own materials more effectively than the traditional publishing houses.
- The rising cost of the journal publications, coupled with the explosive growth in research and concomitant explosion of paper journals in various disciplines have made it impossible for most libraries to maintain a comprehensive selection of literature.
- Ease of access.[15]

1.4.4 FEATURES OF E-JOURNALS

The e-journals have brought about momentous changes in journal publishing and are revolutionizing libraries. There are many features which make the e-journals user friendly. The positive features of electronic journals as compared to the print journals are as follows:

- Allow remote access.
- Can be used simultaneously by more than one user.
- Provide timely access.
- Support different searching capabilities.
- Accommodate unique features such as hyper linking.
- Save physical storage space.
- Support multimedia information.
- Do not require physical processing.
- Environmentally valuable.
- Can be saved digitally.[16]

1.4.5 TYPES OF E-JOURNALS

Electronic journals come in many types. Some of them are traditional paper journals simply made available electronically; others have no equivalent paper copies. They can be broadly grouped into two categories.

1.4.5.1 Online Journals: Online journals are those journals that are available on 'pay as you go' or 'cost per access' basis, via such online hosts as STN international, using property retrieval software. These e-journals are not

considered as part of library collections, because of remote online systems. Basically online journals are the electronic versions of existing printed journals. For example, all journals of American Chemical Society are available in full-text through STN international.

1.4.5.2 CD-ROM Journals: CD-ROM journals are the full-text journals published and distributed in the form of CD-ROM with regular updates, along with search software to access and print like online journals. The vast majority of the CD-ROM based journals are the electronic versions of the printed journals. [17]

1.4.6 CLASSIFICATION OF E-JOURNALS

On the basis of the distribution methods, the e-journals can be classified as follows:-.

1.4.6.1 Classic e-journals or Internet e-Journals: Some of the electronic journals are available through Internet applications, which are also called classic Journals. Originally they were distributed via-e-mail but now are available on the web and only announcements of new issues are distributed by e-mail. Access to this category of e-journal is free of cost.

1.4.6.2 Parallel E-Journals: These types of journals are published simultaneously in both forms; print and electronic. The online version may include the full text of journal, only table of contents (TOC) of selected articles and excerpts from the print version.

1.4.6.3 Database Model and Software Model: Under the Database model, articles reside in a centralized database maintained by the publisher and subscribers are given permission to access the database and use search software on central computer to locate and download articles. The software model provides a piece of software, which runs on Internet connected computers and connects to the database to the journals in the central computer. The users can search and download information, which will be sent in proprietary encrypted form. The software would have an expiration date that corresponds with the length of the subscription.

1.4.6.4 CD-ROM Journals: Commercial publishers have also made journal titles available on CD-ROM. The full text of journals and newspapers has been made available on CD-ROM. In many cases these titles duplicate print titles held by the libraries. Libraries have often subscribed to journals both in print and in microform.

1.4.7 ADVANTAGES OF E-JOURNALS

E-journals have many advantages over the print journals. Some of them are enumerated below.

- The speed of publication and delivery of the e-journal issues are much faster than that of the print versions.
- Inclusion of audio and video base text in the journal issues is possible.
- To access and retrieve relevant articles, a good number of search engines are available.
- Downloading and printing of relevant articles at the end user workstations are possible.
- E-journals have solved many problems of libraries such as space, shelving, missing of issues, missing of pages and cutting of the pages, etc.
- Multiple access and access through local networks become easy.
- Provide hypermedia linkages, i.e., linkages to the related articles cited in each article and other useful sources.
- Help in minimizing the problems related to the conservation and preservation of journals.
- Cost of publication and distribution is less than that of the print versions.
- Alerting the users regarding the publication of new issues and articles of their interest becomes earlier in electronic media.

1.4.8. DISADVANTAGES OF E-JOURNALS

There are also some disadvantages of e-journals such as;

- The psychology that paper, being a more permanent medium is more authentic than e-media.
- The lack of originality.
- Difficulty in citing the web based journals on articles due to the volatility of medium.
- People are still not accustomed to reading off the computer monitor and prefer to take a printout.
- Economic barriers.
- Difficulty to remember password. [18]

1.5 E-JOURNAL CONSORTIA

Knowledge is growing at a fast rate and is becoming multi-dimensional in nature. It is being produced from all over the world in all languages, all subjects and in all forms. Due to the voluminous growth of literature, no library can afford to procure, process or store all the documents required by its users, however rich the library may be. In order to fulfill their requirements, the libraries are forced to procure documents from other libraries. This concept has led to the emergence of the library cooperation and resource sharing. Introduction of communication and computer technology has led to the emergence of the concept of networking. Consortia is the latest buzz word emerged by the coming together of a group of libraries for collective bargaining with publishers, distributors or vendors for purchasing library resources.

E-journal consortium is a cooperative arrangement among group of libraries helping to derive the best possible purchase bargain from publishers due to the collective buying power. In other words, it is a kind of agreement between various publishers and cooperative group of libraries for accessing the large number of e-journals published by various publishers on highly discounted rates. This arrangement on the one hand permits

access to large number of e-journals at highly discounted rates and on the other hand, it meets the increasing pressure of diminishing library budgets, increased users' demands, and rising cost of journals. Consortia offer healthy business to the e-journal publishers also and thus attract best possible price and terms of agreement for libraries.

1.5.1 NEED FOR CONSORTIA

Information explosion, racketing costs of journals, technological developments and information sharing zeal of S&T community have given impetus on innovation in resource sharing in the field of online accessibility of R&D journals. With the emergence and rapid growth of network and IT infrastructure, publishers are able to offer their journals online. Consortia offer healthy growth opportunities for both electronic publishers and libraries. The consortium acts as an agent on behalf of all members libraries to negotiate with the publishers to minimize the purchase price. Library consortia are commonly formed to negotiate joint purchases (e.g. Equipment, software, books, library materials and licensed electronic databases and resources) and to share resources.

1.5.2 ADVANTAGES OF E-JOURNAL CONSORTIA

The advantages of e-journal consortia are as follows:

- Help to overcome the problem of financial constraints.
- Enable cost-effective selection and comprehensive collection development programs.
- Help to avoid duplication in collection especially for expensive journals.
- Every library can make use of holdings of participating libraries.
- Easy, quick and round the clock access to electronic resources leading to greater satisfaction among the users.
- Help to improve library services by exploring the unimaginable range of e-journals. [19]

1.5.3 CONSORTIA INITIATIVES: INTERNATIONAL SCENARIO

Many libraries at international level have set up consortia among themselves for resource sharing. Few e-journal consortia at the international level are given below.

1.5.3.1 ATLANTA HEALTH SCIENCES LIBRARIES CONSORTIUM (AHSLC)

Atlanta Health Sciences Libraries Consortium (AHSLC) was founded in 1974. It is a cooperative organization with a membership of 29 health sciences libraries. It was formed to foster professional growth, education, and communication among health sciences libraries to promote the value of libraries and encourage their development and to facilitate resource sharing. AHSLC began with seven libraries and has now progressed to 34 current members.

1.5.3.2 NOVANET

NOVANET is a consortium of academic libraries which cooperate to enhance access to information and knowledge for the benefit of their user communities. It was established in 1988. It currently consists of ten post-secondary institutions. NOVANET serves over 44,000 full time post-secondary students. NOVANET consortium offers various services to its users such as maintaining a library management system, developing innovative approaches to resource sharing and facilitating cooperative collection development among member libraries.

1.5.3.3. WASHINGTON RESEARCH LIBRARY CONSORTIUM (WRLC)

The Washington Research Library Consortium (WRLC) was established in 1987 by some major universities in Washington D.C to share library collections and information technology in order to enhance the resources available to their students and faculty. WRLC provides mission-critical services to its member universities such as information technology supporting library operations and resource sharing, access to online resources, technologies to support digital collections and share campus scholarship and offsite storage to free valuable space in campus libraries.

1.5.3.4. INTERNATIONAL COALITION OF LIBRARY CONSORTIA (ICOLC)

The International Coalition of Library Consortia (IOCLC) was established in 1997. The coalition continues to be an informal, self organized group comprising nearly 150 library consortia from around the world. The coalition serves primarily higher education institutions by facilitating discussions among consortia on issues of common interest. At times during the year, IOCLC conducts meeting to keep participating consortia informed about new electronic resources, pricing practices of electronic providers, and vendors and other issues of importance to consortia. [20]

1.5.4 INDIAN INITIATIVES

Many library consortia around the country have been formed on different lines. They range from informal gathering of library of professionals for the purpose of sharing information and promoting a united front to more formally organized operations. The following consortiums are active in India.

1.5.4.1 FORUM FOR RESOURCE SHARING IN ASTRONOMY AND ASTROPHYSICS (FORSA)

FORSA was established in 1981. This is an informal group consisting of Indian Institute of Astrophysics (IIA), Inter University Center for Astronomy and Astrophysics (IUCAA), National Centre for Radio Astrophysics (NCRA), Physical Research Laboratory (PRL), Raman Research Institute (RRI), Tata Institute of Fundamental Research (TIFR), Nizamiah Observatory (NO) and Uttar Pradesh State Observatory (UPSO). It is subscribing 25 electronic journals to Indian Astrophysics Consortium. It is also working out the consortia purchase of AIP and other publishers.

1.5.4.2 COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH (CSIR) CONSORTIUM.

One of the worth maintaining Indian consortia is CSIR consortium. The NISCAIR, New Delhi was identified as the coordinator of CSIR consortium and a monitoring committee was set up with NISCAIR as the focal point. The major objective of the CSIR consortium is to strengthen CSIR library resources and provide electronic access to scientists of 40 CSIR laboratories across the country. The consortium as a first

step entered a contact with Elsevier Science to enable access to all its laboratories to 1,200 e-journals published by Elsevier. The CSIR consortium now provides access to nearly 4500 e-journals of well known publishers to the consortium members.

1.5.4.3 INDIAN NATIONAL DIGITAL LIBRARY IN ENGINEERING SCIENCE AND TECHNOLOGY (INDEST)

INDEST is a consortium of 38 members of engineering institutes, located at different states. INDEST was set up under the Ministry of Human Resource Development (MHRD) as per the recommendations of an expert group headed by Prof. Balakrishnan of IISc to set up consortia based subscription of Electronic Resources for Technical Education system in India. This consortium is available in three models. Presently all the IITs, IISc, NITs, IIMs and most of the regional engineering colleges are its members. This consortium subscribes over 4250 e-journals. The consortium being an open ended proposition, welcomes institutions to join it on their own for sharing maximum benefits. It offers in terms of lower subscription rates and better terms of agreement with the publishers. All electronic resources being subscribed shall be available from the publisher's websites. The membership of the consortium is open to any private or government funded Engineering./Technological/Educational Institutions/Universities for one or more electronic resources. The consortium will charge nominal annual fee for its services.

1.5.4.4 UGC INFONET

INFLIBNET launched an e-journal consortium on 6th April 2003 by the then President of India Dr. APJ Abdul Kalam, which is known as UGC-INFONET. This consortium has been setup by the chairman UGC to promote the use of electronic databases and full text access to journals by the research and academic community in the country. The faculty, research scholars and students of universities covered under UGC are the primary beneficiaries of this consortium.

UGC will bear the entire expenses for UGC funded Universities for providing e-journals access on behalf of participating universities. INFLIBNET center, an IUC of UGC will subscribe resources based on the recommendation of National Negotiating

Committee setup by UGC in the 10th plan period. The consortium covers all the disciplines viz. pure sciences, social sciences and Humanities including management and language.

1.5.4.5 J-GATE CUSTOM CONTENT CONSORTIA (JCCC)

JCCC is an electronic gateway to global e-journal literature, launched in 2001 by informatics India Limited. It provides sample access to millions of journal articles available online. It presently has a massive database of journal literature indexed from about 11,800+ e-journals with links to full text at publisher sites. J-Gate is providing table of contents for more than 11500 e-journals and more than 3 million articles. Search is provided by journal title, keyword, subject categories and year of publications. Basic bibliographic data with abstracts are also provided.[21]

1.5.4.6 HEALTH SCIENCES LIBRARY AND INFORMATION NETWORK CONSORTIUM (HELINET)

HELINET is a health sciences library consortium established by the Rajiv Gandhi University of Health Sciences, Karnataka by networking libraries in all colleges under the university to promote cooperative procurement and resource sharing. The main motto of HELINET is networking all the libraries under RGUHS for minimizing the cost of acquisition and maintenance of resources and maximizing their utilization among the users of the colleges of the university. It provides access to around 600 international bio-medical journals at about one third prices of their print subscription. The member colleges can get all time access to the current journals and archives for period of 7-10 years.[22]

1.6. NEED AND SIGNIFICANCE OF THE STUDY

In the present era of information explosion, more and more publications are becoming web concerned. Most of the science and technology libraries have changed the contemporary outlook towards their functions and services. The environment is rapidly changing to electronic environment. So the investigator

decided to conduct the study for measuring the use of e-journals by the PG students of the Faculty of Medicine in AMU, Aligarh.

1.7 STATEMENT OF THE PROBLEM

The problem selected for the present study is entitled "Use of e-journals by the PG students of the Faculty of Medicine, AMU, Aligarh: A survey".

1.8 DEFINITION OF TERMS

Use: Oxford English Dictionary defined Use as "to follow or exercise; to discharge the functions".

E-Journals: According to Encyclopedia of Librarianship and Information Science E-journal is "a term used to describe a journal that is published in digital form to be displayed on a computer screen".

Postgraduate: According to Collin's English Dictionary and Thesaurus, "Postgraduate is a student who has obtained a degree from a university and is pursuing studies for a more advanced qualification"

Student: According to Oxford English Dictionary, "student is a person studying at a university or college"

Faculty: Oxford English Dictionary defined Faculty as "the branch or department of knowledge"

Medicine: According to Oxford English Dictionary, "Medicine is the science or the practice of treatment and prevention of disease".

AMU: The AMU is a residential academic institution, which was established in 1875 by Sir Syed Ahmad Khan as a college and became university in 1920. It is a well-known University of international repute having variety of modern and traditional facilities.

Aligarh: Aligarh is a city, located in Uttar Pradesh, famous for Aligarh Muslim University.

Survey: According to Tull and Albaum "survey is concerned with the art of science of asking questions and/or observing behaviors to obtain information"

1.9 SCOPE AND LIMITATIONS OF THE STUDY

The main purpose of the present study entitled "Use of e-journals by the PG students of the Faculty of Medicine, AMU, Aligarh: A survey" was to find the use level of e-journals in the Faculty of Medicine in AMU, Aligarh. The investigator was able to identify some of the major limitations such as:

(i) The present study consists of only the e-journals users.

(ii) The geographical area is restricted in the Faculty of Medicine, AMU, Aligarh only.

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Chapter 2

Review Of Related Literature

REVIEW OF RELATED LITERATURE

Research refers to a search for knowledge. It is a systematic method for the original contribution to the existing stock of knowledge consisting of various steps. The foremost step is the definition of the research problem. Once it has been formulated by the researcher, he/she should undertake an extensive survey of related literature connected with the problem. The main objective of this literature review is to determine whether any data source exists already that can be brought to bear the problem in hand. For this purpose, the academic journals, conference proceedings, government reports, books, etc. must be tapped depending on the nature of the problem.

In this chapter, an overall review of the studies conducted both in India and abroad have been presented in a chorological order, related to the current topic "Use of E-journals by the PG Students of the Faculty of Medicine, AMU, Aligarh : A Survey". The investigator reviews only those studies which are directly or indirectly related to the present study.

Black, Deborah D. and Robinson, Ann Z. (2000)[1] examined the use of print journals in an intra campus exchange program and its implications on e-journal subscriptions in the Library of Health Sciences and the Science Library at the University of Illinois. The study revealed that the use of exchange program started between the two libraries was steady at LHS and sporadic at Science. The exchange titles were ideal for electronic subscription due to their increasing demand. However, the study suggests that print journals provide a mode of access that has certain benefits. They provide the professional option for many faculties to stay abreast with their research. Though many patrons prefer e-journals, they may not be possible to due to financial constraints.

Anilkumar, Nishtha (2001)[2] explained the major issues regarding e-journals in the era of ongoing shift towards electronic publishing and access to e-resources. The major issues regarding electronic journals are their pricing, reliability and accessibility of data, archiving and back files availability, full-text features, and currency of information,

intellectual property and copy right issues. The author also discussed about major publishers of e-journals. Today, a number e-journals in different fields of study are published by a number of publishers such as Elsevier Science, American Institute of physics, American Physical Society, Optical Society of America, University of Chicago Press, Cambridge University Press, Institute of Physics, Springer Verlag, Kulwer and Academic Press.

Davis, Philip M. (2002)[3] discussed the finding of a study conducted on the annual usage pattern of member institutions for the North East Research Library (NERL) Consortium for the Academic Press IDEAL aggregate package. The analysis of the collected data showed that a small number of journals formed the majority of the total use. Each institution illustrated a unique usage pattern with some using more or less of the collection. No institution used every title and some titles were used very frequently. The title not subscribed in print received about ten times less use than locally subscribed titles. The study recommends that the institutions may consider their consortia membership and organize themselves into group of institutions with similar missions. Institutions which exhibit an intense use of a small number of journals may negotiate for better financial deal.

Fosmire, Michael and Young, Elizabeth (2002)[4] report results of a survey of the level of access provided to selected free scholarly electronic journals by academic libraries. A list of scholarly journals that are available electronically without any access limitations was compiled and for each title the number of holding institutions on OCLC and its coverage by major abstracting and indexing services were determined. The twenty-five most popular titles determined by number of holding institutions on OCLC were searched on a random sample of library Web sites and catalogs to provide a separate gauge for access levels provided by institutions. Approximately half of the titles being indexed by major vendors, including 88 percent of the top twenty-five, access levels were fairly low and decreased dramatically with size of the institution. The Bulletin of the American mathematical Society, Journals of Extension provide examples of free

e-journals with print counterparts. Approximately one half and one-third of the institutions provide access to only the print versions of these journals.

Chakraborty, H.K. (2002)[5] reveals that electronic Journals have now been recognized as a major link in scholarly communication. The timely publication, ease in delivery, incorporation of multimedia contents, hyper linking and search facility etc. are some of the feature, which have attracted interest of both library and scholarly communities. The article deals with importance, definition, evolutionary trends and access of e-journal. It discusses along with advantages, the burning issues and challenges to the present and future library and information professionals. The article ends with the comment that the electronic journal as a result of the explosion of Internet use, particularly World Wide Web technology.

Brennan, Martin J, Hurd, Julie M, Blecic, Debora D and Weller, Ann C. (2002)[6] attempted a survey which is a qualitative exploration of wide array of issues related to there search and teaching habits of early adopters of e-journals in a research setting. This was conducted in the spring of 2001 with faculty in the basic and health sciences at the University of Illinois at Chicago. Open-ended questionnaires provided a framework to wide-ranging discussions of perceptions, expectations, and changing practices pertaining to e-journals and other electronic resources. The results were analyzed with a specific focus on shared behaviors and value, disciplines-depended variations and changing research and teaching habits. Several challenges for library resources and services were identified and discussed.

Talya, Sanna and Maula, Hanni (2003)[7] contribute to the development of a domain analytic approach for explaining the use and non-use of e-journals and databases. They identify and define factors to account for disciplinary differences in e-journals use, outline hypotheses to be tested more rigorously in future research, and test them initially on a limited data set. The empirical data

was gathered as a part of a wider qualitative study-exploring scholars, use of networked resources in four different disciplines: nursing science, literature/cultural studies, history and ecological environmental science. They suggested that e-journals and databases are likely to be used most heavily in fields in which direct searching is the dominant search method and topical relevance the primary relevance type and less in fields in which browsing and chaining are the dominant search methods and paradigmatic relevance the primary relevance type. The findings also support the Bates hypothesis that domain size has an important impact on the search methods used.

Singh, Y.K., Vajpai, R.V. and Rupesh Kumar (2003)[8] *examined under the title* "E-journals: A challenge for university's library situated in remote area", the modern time where the whole world is online and it is called internet. The education system has also changed not in India but all over the world. Now we are looking to change media for fast development since last few years in India. Now a day's students, teachers and research scholars are keenly interested to attend the libraries at college or university level. Especially in the colleges or universities which are situated in remote areas. The libraries situated in remote areas should be provided special fund to upgrade his resources, i.e., internet facilities, computer etc. at low cost and libraries staff should be trained to keep e-journals and to help the readers and regular users to the remote.

Bonthron, Karen, Urquehart, Christine, Ellis, David and Armstrong, Chris (2003)[9] discussed under the title "Trends in use of electronic journals in higher education in the UK- view of academic staff and students", where they examined disciplinary differences in the use of electronic journal by academic staff and students and considers whether library services need to differentiate between staff and students when planning support services for electronic journals. Interviews were conducted with 35 staff and over 500 students. The result indicates that academic staff incorporate electronic journal usage into their working patterns in different ways than students and that these differences may

effect attitudes towards support services designed to promote electronic journal usage. Disciplinary differences also need to be considered.

Kumbar, T.S. and Karisiddappas C.R. (2004)[10] explained that there is no standard and accepted precise definition of an e-journals often e-journals are called virtual journals, paperless, online journals, scholarly e-journals, networked journals and CD-ROM Journals etc. Basically e-journal is one which is available in electronic form and can be accessed using computer and communication technologies. With the emergence of internet the prominence of e-journals is felt greatly. E-journals are serials which are produced, published and distributed nationally and internationally via electronic networks.

Dulaymi, Sawsan Taha, Marghalani, Mohamed A, Mc Donald, Andrew and Tait, John I. (2004)[11] discussed the growth of e-journals since 1992. The study investigates the changes in electronic journal (EJ) and printed journal (PJ) collection and acquisition in terms of number of titles, type of provisions and acquisition, budgets and costs between the years 1995 and 2000. The instruments used in this study were questionnaires that were distributed to six academic libraries in Saudi Arabia. The percentages were used to show the differences between the increase and the decrease of electronic journal and printed journal collections and budgets. The most important finding shows that the percentage of electronic journal collections sharply increased in 1996 by 98 percent, which corresponds to a high increase in their budget by 125 percent.

Seibenberg, Tammy R, Galbraith, Betty and Brady, Elleen E.(2004)[12] conducted a study to see if the use pattern among the journal titles were changing and if, the changes were related to e-access. An evaluation of journal use statistics was undertaken to determine if the selection of e-journals in the Owen Science and Engineering Library at the Washington State University was changing the students' and researches' choice of journals in chemistry, physics and mechanical and material engineering. The statistics showed that the most of

the print journals were being used more than they were prior to the advent of e-journals. E-journals were used heavily and availability of electric format greatly enhanced the total use of most titles. However, some e-journals were used little or not at all.

Wulff, Judith L and Nixon, Neal D. (2004)[13] examined the pattern of the electronic journals in an academic health sciences library. The study was conducted in the Kornhauser Health Sciences Library. Use data were collected form three major vendors of electronic journals and were analyzed and correlated using spreadsheet and SPSS for Windows. The result of the study revealed that the people used e-journals in general more often than the corresponding print version. One-click electronic access from citation to article is important users and is an important factor in e-journal usage. The users access e-journals more frequently for clinical use than research needs. The study suggests that the collection development practices based on quality and user needs can be applied with confidence to the electronic environment.

Rockliff, Sue (2004)[14] discusses the experience with the e-journals in The Queen Elizabeth Hospital Library. It was the first health library to commit itself to e-journals in a significant way. The South Australian Human Services Library Consortium has a closed impact on the TQEH Library of becoming an electronic library. The experiences of the last four years show that e-journals have been a success for the library and its users constituting doctors, nurses, allied health staff and students. The users need a lot of training to meet their needs. The library has gained cost benefits as well as other non-measurable benefits by canceling all print journals where electronic access was readily available. The users of the library have adapted well and are a group of a well suited to the application of the new technology. For These reasons, e-journals and other e-resources and e-services have a strong future in the library.

Tenopir, Carol, King, Donal W. and Bush Amy (2004)[15] discussed how medical faculty members use scholarly journals. She examined whether print or electronic journals are read more, whether there is a pattern among the faculty and what similarities and differences there are between the use of journals by the medical faculty and faculty in other disciplines. A survey was conducted at the University of Tennessee Health Sciences Center using questionnaires. The estimation of the collected data using critical incident techniques revealed that the medical faculty read a great deal compared to the scientists. They continue to rely on print journals. They read more articles than scientists and need digested and verified information to save their time. So from this study, it can be ascertained that publishers must find ways to provide current and convenient information in electronic journals in the field of medicine to make them maximum use of.

Angrosh, M A (2005)[16] studied the importance of print and electronic journals in the dissemination of information by applying a value chain analysis. The study focused on obtaining an understanding in terms of cost of productions and cost drivers associated with the journals. The value chain analysis advocated that e-journals are the viable and cost-effective medium for creation and dissemination of information. The initial cost of establishing an e-journal is lower than that of a print journal. The structured annual cost of publishing e-journals reduces over years. The study also suggests that by addressing the crucial issues of authenticity and validity of articles and thereby publishing valuable peer-reviewed scholarly articles, e-journals can play a major role in meeting our increasing demands effectively.

De Groote, Sandra L and Dorsch, Josephine L (2005)[17] conducted a study to determine whether the researcher were more likely to limit the resources they consulted and cited to those journals available online rather than those only in print. The examination of publications of medical faculty from a large urban university and from a regional medical college showed that the number of

journals cited per year continued to increase. Though it was expected that once online journals had been introduced, the use of print journals would decrease, it did not prove to be the case. The number of citations both the print only and online journals increased. The study suggests those medical faculties are not sacrificing quality for convenience. It can be expected in future that online journals will have more time to present an impact as a result of increased user acceptance and use. Also, more journals in medicine continue to become available online.

Nicholas, David and Huntington, Paul (2006)[18] study to quantify the usage of electronic journals as an aid to making the judgements on the use of document supply. A detailed analysis was made of the use of OHIO Link as well as the Blackwell Synergy, Science Direct, Emeraldinsight and OUP databases by CIBER at University College, London. The study presents valuable lights on the actual and distinct from perceived use of electronic fill-text databases. It was found that many more people are accessing e-journals than was the case previously in a print environment. Users are searching more widely as linking becomes easier and abstracts are becoming increasingly popular. The massive use of the databases is significantly affecting the use of information by researchers.

Mogaddam, Golnessa Galyani (2006)[19] explained some pricing and publishing models of electronic journals. The higher and fast rising price e-journals had a professional effect on the flow of the scholarly communications. As a result, the libraries struggled to keep up with the exploring volumes and cost of e-journals especially in science, technology and medicine (STM). Consequently a number of pricing and publishing models of electronic journals have been created to offer a constructive response to those issues. The author discusses some of such models in the field of STM. The mostly used models in STM are TULIP, PEAK, SPARK, BioOne, High Wire Press, Project MUSE, JSTOR, PubMed, and EPIC.

Burrows, Buzzetta (2006)[20] describes the patterns of electronic journal usage in health sciences libraries during the past decade (1995-2004). The study focuses on the pattern of acquisition, management and use of e-journals at the Louise Calder Memorial Library of the University Of Miami Miller School Of Medicine. During 1995-99, e-journal service got initiated at the library, e-journals growth occurred during 2000-02 and e-journal began forging paths of their own during 2003-04 the health science s libraries, their patrons and the public were early to embrace the e-journals and continue to embrace the significant changes in scholarly communication they enable. Although the patterns of e-journals among the health sciences libraries and other libraries have similarities, they also have differences. Broad studies of e-journals in non-health sciences libraries have been published, but a retrospective review of e-journals in health sciences libraries has not.

Urbano, Cristobel and Borrego, Angel (2007)[21] analyzed the behavior of the users of a package of e-journals using the data of consumption per IP address. The study was conducted on faculty members, research scholars and students of the Faculty of Chemistry at the University of Barcelona on their data consumption of 31 e-journals of American Chemical Society. Data on sessions, articles downloaded and abstracts viewed were gathered and analyzed. The results of the study reveals that most of the consumption was concentrated at a few IP addresses and most of the users make little use of information available. The study also indicates to be a greater dispersion of the consumption of electronic information than of information on print journals.

Shiva Kumar and Grover, V K (2007)[22] discussed different aspects of electronic journals and their impact on users, authors, indexing services, scholarly communication, accessibility and library management. This paper presents the definition, forms and the objectives of the e-journals. E-journals play a crucial role in users' attitude towards accessing information, authors' attitude while submitting scholarly articles, quality of information, scholarly communication such as connecting authors and users, scholarship and research, etc. They also have an impact on library management such as infrastructure, collection development and management, technical processing, reference service, space, staffing, etc.

Fortini, Toni (2007)[23] details the problems and concerns that arise during an electronic journal project and the issues that persist through e-journal acquisition and management. The survey was conducted on the experiences of e-journal selection and management of staff members of three academic libraries. After examining their responses, the study resolves that the librarians considering a switch to electronic access face many problems. They must be prepared to face continuing problem with access, archiving, cost, staffing and technology. The study also indicates a lack of conscience between the different levels of administration regarding problems and concerns with e-journals management suggesting a need for better administrative communication.

Nikam, Kahiser and Pramodini, B (2007)[24] explains the use of e-journals and databases subscribed by the UGC-Infonet consortium by the users at the University of Mysore. The present study also focuses the utilization and satisfaction level of users with respect to the electronic recourses. A sample population of 200 consisting of faculty members and research scholar were studied and the collected data were analyzed using tables and percentages. It revealed that internet has revolutionized the modes of accessing and dissemination of information. E-journals and databases have grown to be the most important sources of information today. UGC-Infonet is one of the important initiatives that provide access to e-journals and databases. But its use is marginal and the scientists need constant guidance and training to maximize the use of e-resources. The libraries have an important role to play in assisting the users to make the best use of e-journals to a maximum extent.

Dollar, Daniel M, Gallagher, John, Glover, Janis, Marone, Regina Kenny and Crooker, Cynthia (2007)[25] described their experience of migration from print to electronic resources to manage the electronic resources at the Cushing/Whitney Medical Library at the Yale University. The case study by the researchers found that hundreds of print journals were shifted to electronic only. This transition from print to electronic journals has meant better services to library patrons and help advance the research and patient care missions. The challenges of managing electronic journals have forced the

library staff to work together more collaboratively and have created a more cooperative work environment. The study recommends that the library staff must be willing to make fundamental changes to traditional library roles and to take on new roles to keep a medical library vital in an electronic age.

Mc Kibbon, K. Ann, Hynes, R. Brian, Mc Kinlay and Lokker, Cynthia (2007)[26] conducted a study to determine which journals primary care physicians and specialists not affiliated with an academic medical centre access and how the accesses correlate with measures of journal quality and importance. The data collected from 105 physicians for 18 months revealed that the clinicians accessed only 38% of the available journals. Some titles were accessed by many physicians but a few times per physicians, while other titles were accessed by the same physicians multiple times. They often select journals with relatively higher number of articles abstracted in ACP Journal Club. The study finds that the primary care physicians choose full text articles than specialists. Most of the journals accessed by both the group were of high quality. This study reflects challenges that the librarians have always had with providing a useful set of e journals within budget and in times of ever increasing subscription costs.

Sunitha, T (2008)[27] explains and discusses various issues and additional prospects relating to electronic journal collection development. Many electronic journal subscription models which are offered by different publishers and are practised in India have been discussed by the author. The prominent models practised in India are direct and second party e-journals, aggregated e-journals, e-content access to print subscription, consortia based subscription and open access journals. The author explains some issues related to e-journal collection development. The collection development of electronic journals is a tricky and far more complex process. The various issues which have to be taken care of are access related issues, copy right issues, pricing, IT infrastructure, budget provision, usage monitoring and usability, consortia based subscription issues, archival issues, etc.

Madhusudan, Margam (2008)[28] described the needs and requirements of uses regarding electronic journals in general and the use of UGC- Infonet library and information science e-journals in the University of Delhi by research scholars and students of DLIS in particular. The analysis of the collected data on knowledge of UGC Infonet, purpose of its use, frequency of use, methods of reading, etc. revealed that e-journals play an increasingly important role in research at DLIS. The researchers and students not only required current journals, but significant back runs as well. There is an ever increasing demand for subscriptions of more e-journals in LIS. There appears to be some needs for academics to be provided with training in using in e-journals. The area where the greatest need for training is around managing references. The study recommends installing more computer terminals in the department computer labs and the DLIS websites to facilitate the content pages of e-journals to maximise the use of e-journals of UGC Infonet.

Mogaddam, Golnessa Galyani and Talawar, V G (2008)[29] investigate the use of scholarly electronic journals by users of 40 departments at the Indian Institute of Science, Bangalore. Their study was mainly aimed at finding how the scholarly electronic journals are being used in a multi disciplinary institute in India. The opinions of the users on different features of e-journals, their awareness of e-journal service, their purpose of use, preferred format, etc. have been collected using questionnaire method. The study showed a growing interest in scholarly electronic journals among the users at IISc. Electronic journals are mostly used for research needs and PDF format was the most preferred format. The fact that users have free access to e-journals at all hours from their own computers seems to be the most appealing feature. By providing original data from Indian end users of scholarly e-journal, this study provides useful empirical evidence for library staff and research community.

Chanra Kumar, Velayutham (2009)[30] examines the use and utilization of e-journals by the research scholars at the University of Madras. Using a standard survey method, the research scholars' computer and internet access and use, and use and usefulness of e-journals were examined. It was found that the majority of the research scholars often use e-journals. Though they are aware of some consortia like UGC Infonet, most of them

don't often use them. The research scholars of the university consider e-journals as useful resources of scholarly communication. Some of them consider e-journal as a substitution to print journals, while some don't. The study recommends that the accessibility and use of UGC Infonet facilities be promoted among the researchers of the university by providing seamless access of e-journals.

Kanadiaya, Prayatkar K and Akbari, Atul K (2009)[31] explained different factors related to the e-journals such as definitions, importance, history, latest trends and access of e-journals. Some other issues such as advantages, burning issues, challenges to the present and future LIS professionals, the selection issues, acquisition procedures, process of accessing and archiving of e-journals, etc. have also been explained. The authors suggest that while subscribing to e-journals, first of all their importance in the library, available space, equipments to utilize e-journals' information in electronic form, etc. have to be kept in mind. Main attention should be paid to journals that library subscribes to in print form, in order to provide required useful information.

Tenopir, Carol, King, Donald W, Edwards, Sheri and Wu, Lei (2009)[32] examined how faculty members locate, obtain, read and use scholarly articles and how this has changed with the wide spread availability e-journals and journals alternatives. The data on information seeking and reading patterns of science, technology, medical and social science faculty members, mostly in USA, from 1977 to 2008 have been gathered using questionnaires. The analysis of the gathered data showed that the information seeking and reading patterns of respondents of the study are changing with the growth of e-journals. They locate articles through a variety of information seeking methods such as browsing, online searching, following citation links, getting recommendations from colleagues, yet the proportion of articles located by searching is increasing.

Shears, Barbara S, Klatt, Carolyn and Nagy, Suzanne P. (2009)[33] evaluated the results of a previously reported method for creating a core medical e-journal collection for a new medical school library. The present study validates the core collection created specifically to meet the needs of the new school and identifies the strategy for making

cost effective e-journal selection decision. The usage data were extracted for four e-journal packages. The usage data were correlated with weighted point values assigned to a core list e-journals and each package was evaluated for relevancy to the Florida State University College of Medicine population. The most important finding of the study was that the core list was a valid method for creating a new community based medical school library. There exists a positive correlation between the journal usage and core list values.

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Chapter 3

Methodology

METHODOLOGY

This chapter deals with the methodology used in the present study and the chapter has been discussed under the following headings:

3.1 Selection of the problem

3.2 Objectives of the study

3.3 Hypotheses

3.4 Methodology

3.5 Tools used for study

3.6 Sample population

3.7 Scope of the study

3.8 Data collection procedure

3.9 Data analysis method.

3.1 SELECTION OF THE PROBLEM

The problem of the present study is "Use of e-journals by the PG students of the Faculty of Medicine, AMU, Aligarh: A survey". The problem was selected by the investigator to get an idea about the accessing of e-journals by the PG students of the Faculty of Medicine in AMU, so that the library can make changes to the e-journal service depending up on the results and suggestions.

3.2 OBJECTIVES OF THE STUDY

The main objectives of the study are:

3.2.1 To examine the level of information of e-journal services by the PG students of the Faculty of Medicine in AMU.

3.2.2 To know the place from where they access e-journals.

3.2.3 To find out the purpose of using e-journals.

3.2.4 To know their experiences with the features and demerits of e-journals.

3.2.5 To know about the popular e-journal titles among the medical PG students in AMU.

3.2.6 To know the most preferred format for reading e-journals.

3.2.7 To find out the method of searching of e-journal articles.

3.2.8 To know the awareness of e-journal consortia.

3.2.9 To find out the problems faced by the PG students while accessing e-journals.

3.2.10 To know the effectiveness of e-journal service by the Medical College Library.

3.3 HYPOTHESES

3.3.1 Most of the PG students of the Faculty of Medicine in AMU are aware of e-journals.

3.3.2 Most of the PG students access e-journals in Medical College Library.

3.3.3 Most of the PG students are satisfied with the e-journal services provided by the Medical College Library.

3.3.4 Most of the PG students are facing problems while accessing e-journals.

3.3.5 Most of the PG students are aware of some e-journal consortia in Medicine.

3.4 METHODOLOGY

Methodology has its own importance in scientific investigation, because objectivity in any research investigation can not be obtained unless it is carried out in a very systematic and planned manner. Scientific investigation involves careful and proper adoption of research design, use of standardized tools and tests identifying adequate sample by using appropriate sampling techniques, some procedures for collecting data and then after careful tabulation, the use of appropriate statistical technique for analyzing the data. For this study the investigator used questionnaire method.

3.5 TOOLS USED FOR THE STUDY

Questionnaire was used as the tool for the present study for collecting data.

3.5.1 QUESTIONNAIRE METHOD:

Questionnaire is a tool to collect the data from the diverse large and widely scattered groups. This method of data collection is quite popular. A questionnaire consists of a number of questions printed in a definite order. In this method a questionnaire is given to a person concerned with a request to answer the question and return the questionnaire. The respondent has to answer the question on his own.

Questionnaires are of two types

1- **Open questionnaire:** - In this type of questionnaire no answer is given against question. Respondent supply the answer in his own words.

2- **Closed questionnaire:** - In this type of questionnaire, answer is given against the question. The respondent has to select the alternative answer written against the question. So the work of the respondent is to indicate his /her choice.

3.6 SAMPLE POPULATION

The present study was conducted on a sample of 76 PG students of the Faculty of Medicine in AMU, Aligarh. A total of 100 questionnaires were distributed out of 395 PG students of the Faculty and only 76 filled questionnaires were received back by the investigator. The investigator selected all the 76 questionnaires, which constitute about 20% of the total population of PG students, for the analysis of the data.

3.7 SCOPE OF THE STUDY

The present study is only concerned to the PG students of the Faculty of Medicine in AMU, Aligarh and their use of e-journals.

3.8 DATA COLLECTION PROCEDURE

For the present study, the investigator visited the Faculty of Medicine, AMU, Aligarh and approached the PG students of the Faculty to collect the necessary data. Questionnaires were distributed to the PG students and filled questionnaires were collected either on the spot or after one or two days.

3.9 DATA ANALYSIS

The data collected through questionnaires were organized and tabulated by using statistical methods and percentages.

Chapter 4

Data Analysis And Interpretation

DATA ANALYSIS AND INTERPRETATION

In user studies, after the data have been collected, the investigator turns to the task of analyzing the data and interpreting the results. The analysis of data requires a number of closely related operations such as establishment of categories, application of these categories to raw data through coding, tabulation, drawing statistical inferences and summarizing of data to obtain answer to the problem of research. The collected data are analyzed with the help of various statistical measures. After analyzing the data, the investigator tests the hypotheses and arrives at generalization and builds a theory. This process is known as interpretation.

The problem for the present study is "Use of e-journals by the PG students of the Faculty of Medicine, AMU, Aligarh: A survey". The data collected by the investigator were organized and tabulated by using statistical measures such as tables and percentages.

A total number of 100 questionnaires were distributed out of a total of 395 postgraduate students of the Faculty of Medicine at AMU and 76 questionnaires, which constitute 20% of the total population of PG students in the Faculty, were received back by the investigator. The investigator selected all the received questionnaires for analysis of the data.

Table -4.1

Awareness of E-journals

Awareness	No. of responses	Percentage
Aware of	74	97.37%
Not aware of	2	2.63%

It is clear from the above Table 4.1 that 97.37% of the respondents, who are PG students in the Faculty of Medicine in AMU, are aware of e-journals, while a small number of them, i.e. 2.63% are not aware of e-journals.

Table -4.2

Source which gives information about e-journals

Source	No. of responses	Percentage
Print journals	8	10.53%
Colleagues	23	30.26%
Internet	57	75.00%
Others	6	7.89%

(Multiple answers were received)

The data in the above table reveals that 75% of the respondents get information about e-journals from internet. 30.26% of the students get information from colleagues, 10.53% of them collect information from print journals and a small number of them, i.e. 7.89% get information from other sources such as notice boards of departments, library, etc., library staff, teachers, etc.

Table -4.3

Accessing of e-journals

Accessing	No. of responses	Percentage
Access	72	94.74%
Don't access	4	5.26%

We can observe from the Table-4.3 that most of the PG students, i.e. 94.74% access e-journals, while a small number of them constituting 5.26% don't access e-journals.

Table -4.4

Place of accessing e-journals

Place of access	No. of responses	Percentage
Maulana Azad Library	-	-
Medical College Library	41	53.95%
Departmental lab	35	46.05%
University Computer Center	2	2.63%
Others	22	28.75%

(Multiple answers were received)

The above tabulated data clearly indicates that most of the PG students in the Faculty of Medicine access e-journals in the Medical College Library. They consists 53.96% of the total respondents. 46.05% of them go to their respective departmental labs to access e-journals. 28.75% of the students access at other places as home, cyber café, rooms at hostels, etc., while a small number of 2.63% access at the University Computer Center , which is located far from the Medical College. It is also clear from the table that no medical PG student go e-journal lab in the Maulana Azad Library.

Table -4.5

Personal subscription to e-journals

Subscription details	No. of responses	Percentage
Subscribe	3	4.17%
Don't subscribe	69	95.83%

The data shown in Table-4.5 shows that 95.83% of the Medical PG students in AMU don't subscribe personally to e-journals and make use of e-journals subscribed by the University, while 4.17% of them personally subscribe to e-journals.

Table -4.6

Frequency of access

Frequency	No. of responses	Percentage
Daily	12	16.67%
Once in a week	19	26.39%
Twice in a week	12	16.67%
Rarely	15	20.83%
Others	14	19.44%

The tabulation of the frequency of accessing e-journals in the above tables clearly indicates that 26.39% of the students access e-journals only once in a week, 20.83% access rarely, 19.44% access other times such as whenever need arises, occasionally, regularly, many times a week, etc. 16.67% of students access daily and another 16.67% access e-journals twice in a week.

Table -4.7

Experience with e-journal features

	Useful		Not useful		Never heard of it		Would like to try it	
	Total	**%**	**Total**	**%**	**Total**	**%**	**Total**	**%**
a)Video/animated graphics	43	59.72%	-	-	8	11.11%	21	29.2%
b) Links to articles in the same journal	47	65.25%	-	-	13	18.06%	12	16.7%
c) Links to articles in another journal free of cost	27	37.50%	-	-	33	45.83%	12	16.7%
d) Links to subject databases	28	38.89%	3	4.17%	15	20.83%	26	36.1%
e) Links to author's e-mail address	20	27.78%	37	51.4%	8	11.11%	7	9.72%

The above table giving opinions of the respondents about various e-journal features shows that 59.72%, more than half of the population, consider videos in e-journals as useful, 29.2% would like to try this feature, 11.11% have never heard of it and nobody consider it as not useful. Links to cited articles in the same journal is useful to 65.25%, 18.06% have never heard of it, 16.7% would like to try it and none of them consider it as not useful. For 45.83%, the feature of links to a cited article in another journal free of cost is a feature they have never heard of it, for 37.50% it is useful, 16.7% would like to try it and nobody considers it as not useful. Links to subject database is useful to 38.89% of the respondents, 36.1% would like to try it, 20.83% have never heard of it and 4.17% consider it as not useful. While the links to the author's e-mail address is not useful to 51.4%, useful to 27.78%, 11.11% have never heard of it and 9.72% would like to try it.

Table-4.8

Problems with e-journals

	Bib problem		Minor nuisance		Not a problem	
	Total	**%**	**Total**	**%**	**Total**	**%**
a) Videos play slowly	30	41.67%	34	47.22%	8	11.11%
b) Articles in PDF format load slowly	47	65.28%	16	22.22%	9	12.50%
c) Pictures in HTML format load slowly	26	36.12%	32	44.44%	14	19.44%
d) E-journals don't link to cited articles	20	27.78%	29	40.28%	23	31.94%

From the above data, it is observed that slow speed of videos while accessing e-journals is a minor nuisance to nearly half of the respondents, i.e.47.22%, for 41.67% it is a big problem and for 11.11% it is not a problem at all. Slow speed in loading of articles in PDF format is a big problem to 65.28% of the students, a minor problem to 22.22% and not a problem to 12.50%. 44.44% of the respondents consider slow loading of pictures in HTML format as a minor nuisance, 36.12% consider it as a big problem and 19.44% don't consider it as a problem. The lack of links to cited articles is a minor nuisance to 40.28%, not a problem to 31.94% and a big problem to 27.78% of the total respondents.

Table-4.9

Usefulness of e-journals

Reason to be useful	No. of responses	Percentage
Provide timely access	54	71.05%
Support searching facilities	31	40.79%
Allow remote access	19	25.00%
Hyperlink to related articles	14	18.42%
Have multimedia facilities	16	21.05%
Others	6	7.89%

(Multiple answers were received)

The Table-4.9 indicates that 71.05% of the users consider e-journals useful because they provide timely access, 40.79% consider them useful because of their searching capabilities, for 25% they are useful as they allow remote access, for 21.05% e-journals are useful because they have multimedia facilities and for 18.42% of users it is because of their ability to link to related articles. A small number of users consisting 7.89% of the users consider the e-journal features such as ease of use, downloading facility, etc. to rate them as useful.

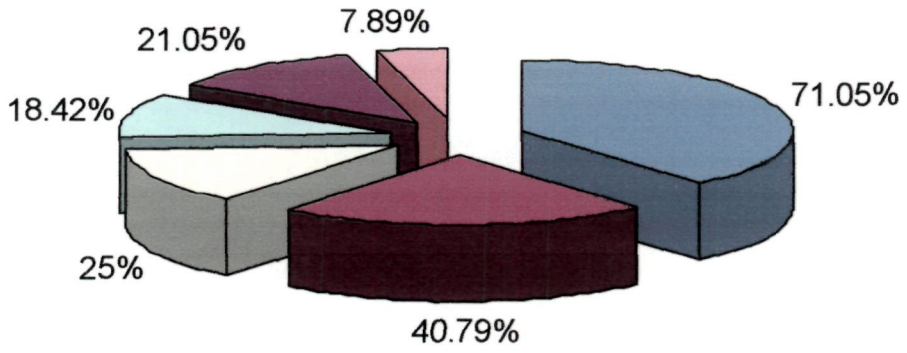
Table-4.10

Most preferred format

Format	No. of responses	Percentage
HTML	14	19.44%
PDF	58	80.56%

We can understand from the above table that the most preferred format for reading e-journals by the respondents is PDF as 80.56% of users prefer it to HTML format , which is preferred by only 19.44% of users.

Figure 4.1 Usefulness of e-journals



Timely access | Searching capabilities | Remote access
Hyperlinking | Multimedia facilities | Others

Table-4.11

Skill in the usage of e-journals

Skill	No. of responses	Percentage
Beginner	26	36.11%
Moderate	40	55.56%
Expert	6	8.33%

It is observed from the Table-4.11 that 55.56% of the users consider themselves as moderate in using e-journals, 36.11% are beginners and only 8.33% of total respondents consider themselves as experts in using e-journals.

Table-4.12

Purpose of using e-journals

Purpose	No. of responses	Percentage
To update knowledge	41	53.95%
For study	42	55.26%
To prepare assignments	35	46.05%
Others	6	7.89%

(Multiple answers were received)

Table-4.12 indicates that majority of the medical PG students in AMU, i.e. 55.26%, use e-journals for study, 53.95% for updating knowledge, 46.05% for preparing assignments and 7.89% for other purposes like preparing dissertation, theses, etc.

Figure 4.2. Purpose of using e-journals

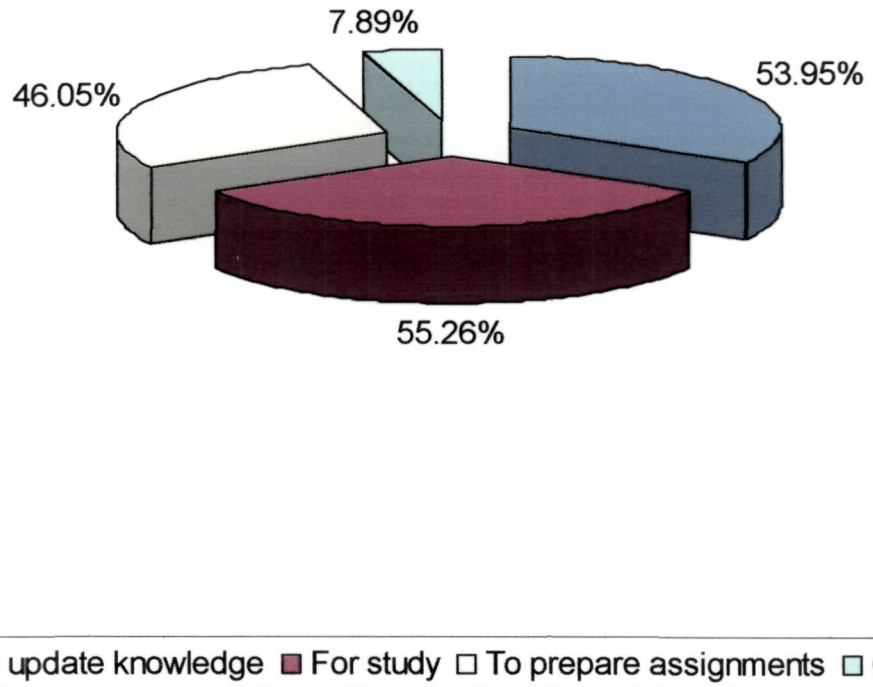


Table-4.13

Mode of article searching

Search through	No. of responses	Percentage
Search engine	47	65.28%
Journals' website	12	16.67%
PubMed's multi-journal website	22	30.56%
Other multi-journal websites	11	15.28%

(Multiple answers were received)

The tabulation of above data discloses that most of the users (65.28%) search articles through search engines, 30.56% search through PubMed's multi-journal search website, 16.67% search through specific journal's website and 15..28% search articles through other multi-journal websites such as Medline, Science direct, etc.

Table-4.14

Access point for searching articles

Search by	No. of responses	Percentage
Keyword	44	61.11%
Author	3	4.17%
Article title	6	8.33%
Journal title	19	26.39%

The above table shows that a large number of students, constituting 61.11% of the total respondents, search articles by keywords, 26.39% search by journal's title, 8.33% search by article's title and a small number consisting 4.17% search by author's name.

Figure 4.3 Mode of searching of articles

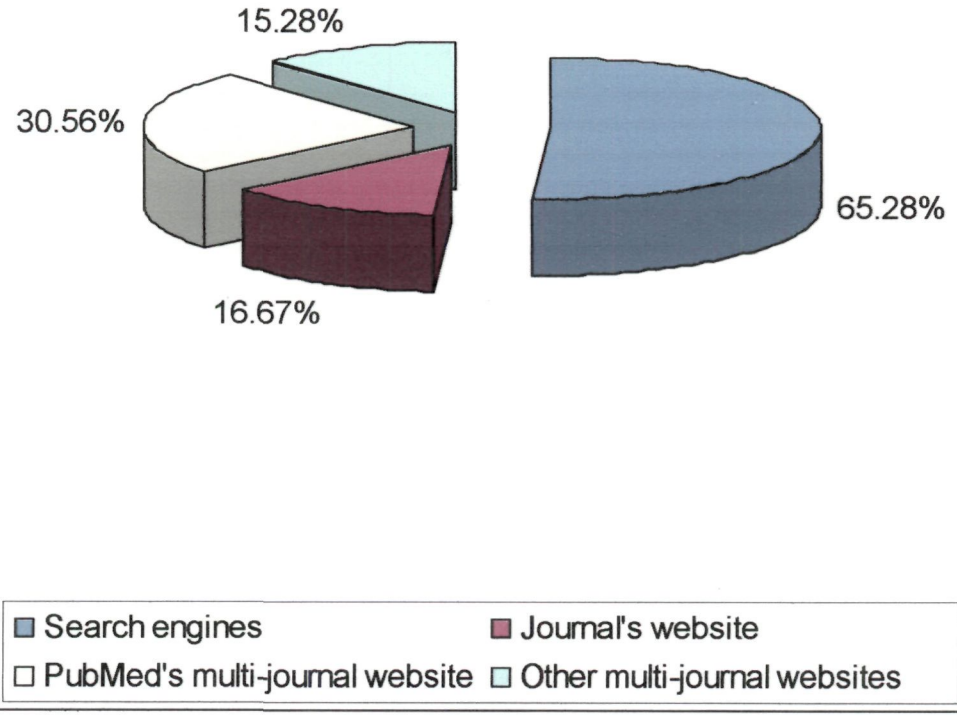


Table-4.15

Use of e-journals once located

Method of use	No. of responses	Percentage
Search specific articles	27	37.50%
Scan latest issues	32	44.44%
Scan table of contents of all issues	13	18.06%

From table-4.15 it is observed that 44.44% of the students scan the latest issues of a journal once it is located. 37.50% search for specific articles needed by them and the remaining 18.06% scan the table of contents of all the issues and locate the articles they need.

Table-4.16

Awareness of e-journal consortia in the subject

Awareness	No. of responses	Percentage
Aware of	33	45.83%
Not aware of	39	54.17%

The above tabulated data shows that more than half of the total respondents (54.17%) are not aware of e-journal consortia in the field of medicine and only the remaining 45.83% are aware of such consortia.

Table-4.17

E-journal consortia used

Consortium	No. of responses	Percentage
UGC-Infonet	31	40.79%
CSIR consortium	-	-
HELINET consortium	-	-
J-Gate consortium	24	31.58%

(Multiple answers were received)

The above table indicates clearly that 40.79% of the PG students in the Faculty of Medicine use UGC-INFONET consortium and 31.58% use J-Gate consortium. No students use CSIR Consortium and HELINET consortium.

Table-4.18

E-journal database used

Database	No. of responses	Percentage
PubMed	67	93.06%
MEDLINE	30	41.67%
NIC MEDLARS Center	18	25.00%
ADONIS	2	2.78%

(Multiple answers were received)

The Table-4.18 shows that the most of the students, i.e. 93.06% use PubMed database, 41.67% use MEDLINE, 25% use NIC MEDLARS Center and only 2.78% use ADONIS database.

Figure 4.4 E-journal database used

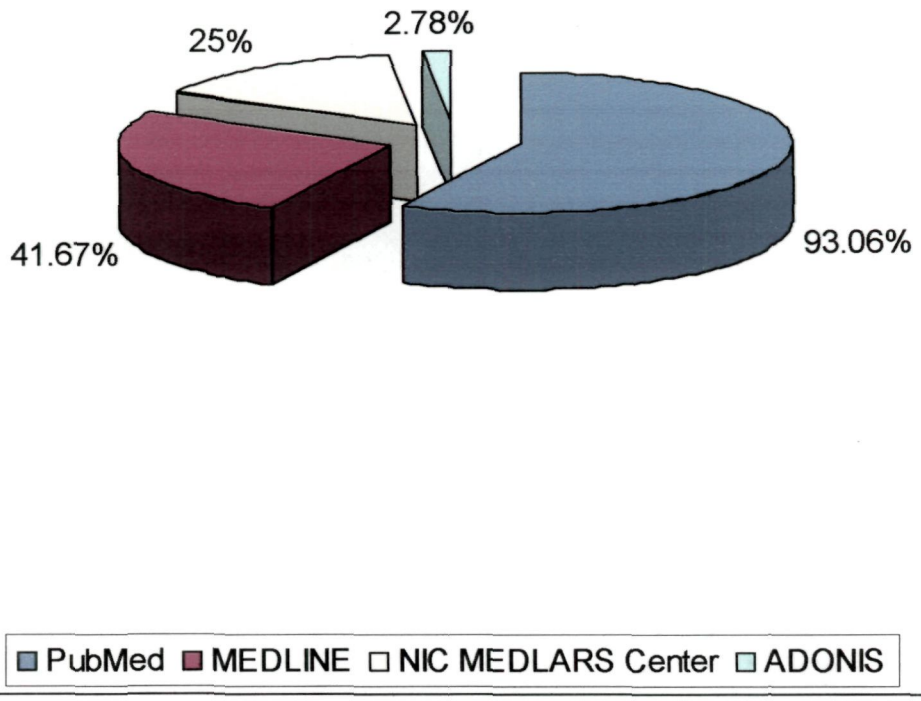


Table-4.19

Method of reading full-text e-journals

Method of reading	No. of responses	Percentage
On the screen	46	63.89%
Taking print-outs	22	30.56%
Downloading on discs	34	47.22%
Other methods	3	4.17%

(Multiple answers were received)

It is clear from the Table-19 that majority of the PG students, constituting 63.89% of the total respondents, read full-text articles on the screen, 47.22% read downloading on discs, 30.56% by taking printouts and 4.17% use other methods to read full-text articles.

Table-4.20

Content of e-journals used for study

Content used	No. of responses	Percentage
Less than 25%	25	34.72%
25 – 50%	33	45.83%
50 – 75%	14	19.45%
More than 75%	-	-

From the above tabulated data, it observed that 45.83% of the total respondents of the study use 25 – 50% of the information content of e-journal articles for study, 34.72% use less than 25% and the remaining 19.45% use 50 – 75% for study. It is also observed that nobody use more than 75% of the information content of e-journal articles for study.

Table-4.21

Awareness of e-journals provided by Medical College Library

Awareness	No. of responses	Percentage
Aware of	51	70.83%
Not aware of	21	29.17%

We can observe from Table 4.21 that a majority of the students (70.83%) are aware of e-journals provided by the Medical College Library to their discipline as compared to the other 29.17%, who are not aware of it.

Table-4.22

Presence of important e-journals in Medical College Library

Presence	No. of responses	Percentage
Has	23	31.94%
Lacks	49	68.06%

The above table shows that 68.06% of the students feel that the Medical College Library does not provide all important e-journals they would like to access, while the other 31.94% are satisfied as they feel all e-journals they would like can be accessed from the Medical College Library.

Table-4.23

Opinion about information content of e-journals

Opinion	No. of responses	Percentage
Most helpful	19	26.39%
Helpful	49	68.06%
Least helpful	4	5.55%
Not helpful at all	-	-

The data in the above table indicates that majority of the medical PG students consider the information content of e-journals as helpful. 68.06% of the population studied has this opinion. 26.39% of them consider it as most helpful, while 5.55% consider it as least helpful. No student has the opinion that they are not helpful at all.

Table-4.24

Objection to e-journals

Objections	No. of responses	Percentage
Have to read on the screen	25	34.72%
Need to take print-outs	16	22.22%
Lack of ability to browse	7	9.72%
Need of internet connection	45	62.50%
Others	8	11.11%

(Multiple answers were received)

The above tabulated data shows that the main objection to the e-journals by the user group is the need for internet connection to access them. 62.50% have this opinion. For 34.72%, reading on the screen is the main problem, for 22.22%, it is the need to take print outs of needed articles and for 11.11% of students some other problems such as

cost, validity and authenticity of information, etc. are the big objections. Some students (9.72%) object e-journals as they cannot be accessed by those who lack ability to browse.

Table-4.25

Problems faced while accessing

Problems	No. of responses	Percentage
Internet connectivity	24	33.33%
Slow speed	26	36.11%
Limited access terminals	34	47.22%
Lack of training	20	27.78%
Others	3	4.17%

(Multiple answers were received)

It is very clear from the Table-4.25 that limited access terminals is the biggest problem faced by the PG students in the Faculty of Medicine in AMU while accessing e-journals. 47.22% of them face this problem. Slow speed of the internet connection is another problem faced by 36.11% of the students. 33.33% face the problem of internet connectivity and 27.78% consider lack of training as a constraint to the e-journal access. Some other students constituting 4.17% of the total respondents face some other problems such as absence of good e-journals in the library, less number of e-journals in some disciplines, etc.

Table-4.26

Need of user training

Need of training	No. of responses	Percentage
Need	60	83.33%
Don't need	12	16.67%

From the Table-4.26, we can easily understand that majority of the medical PG students in AMU are in need of user training to make maximum use of e-journals. 83.33% of the total population supports the training program while the remaining 16.67% are of the opinion that user training is not much necessary.

Chapter 5

Conclusion, Findings And Suggestions

CONCLUSION, FINDINGS AND SUGGESTIONS

5.1 CONCLUSION

The present study sought to examine the use of e-journals by the PG students of the Faculty of Medicine in AMU, and the results show that most of the objectives are met satisfactorily. The study reveals that most of the medical PG students in AMU are aware of e-journals and they access them. It has been found from the survey that maximum PG students access e-journals from the Medical College Library and their departmental labs not only for study but also for updating knowledge and preparing assignments. Though the majority of them access e-journals, only a few students subscribe to them personally. Most of the PG students consider e-journals as useful and it is because of their timely access and searching capabilities. A large number of medical PG students in AMU search articles through search engines using keywords. The study also found that most of the students read full-text articles on the screen and PDF is the most preferred format. Majority of the students are not aware of any e-journal consortia in the field of medicine, yet many of them use other consortia in which AMU is a member. Though most of the PG students in the Faculty of Medicine access e-journals, they face many problems also such as limited access terminals, slow speed of internet connection, etc. and most of them feel that user training is necessary to increase the usage of e-journals among the students.

5.2 FINDINGS

The following are the major findings generated by the present survey.

5.2.1 Most of the PG students in the Faculty of Medicine in AMU are aware of e-journals and access them. 97.37% of the population studied are aware of e-journals and 94.74% of them access e-journals.

5.2.2 Analysis of the collected data shows that (Table 4.4) Medical College Library's 'MEDLARS Center' is the place from where most of the PG students (53.95%) access e-journals. Departmental computer labs are also used by some students(46.05%). Some of them access at University Computer Center and some

other places like cyber café, home, etc. are also used by some students. But none of them go to Maulana Azad Library to access e-journals.

5.2.3 It has been found by the present study that most of the medical PGs in AMU use e-journals for their study purposes (55.26%), followed by for updating knowledge (53.95%), to prepare assignments (46.05%) and other purposes (7.89%).

5.2.4 The analysis of the data reveals that most of the students consider features of e-journals; videos, links to articles in the same journal and links to subject databases as very useful features. 59.72%, 65.25% and 38.89% respectively have this opinion. The feature of links to cited articles in another journal freely has never been heard of the majority of the students (45.83%). Yet this feature is considered as useful by 37.50% of the students. Most of the students (51.39%) are not of the opinion that links to author's e-mail address is a useful one. Only 27.78% feel that this is a useful feature of e-journals.

5.2.5 Analysis of some problematic issues of e-journals (Table 4.8) shows that loading of articles in PDF format is the biggest problem (for 65.28%). Slow speed of videos is problematic for 41.67% and 47.22% consider it as a minor problem. Slow loading of pictures is also not a big problem to majority of the respondents. It is a big problem to 36.12% and a minor nuisance to 44.44%. Absence of links to cited articles is also not a big problem to the majority. For 40.28% it is a minor problem, for 31.94% it is not a problem at all and only for 27.78% it is a big problem.

5.2.6 The study also found that (from Table 4.9) most of the PG students in the Faculty of Medicine consider e-journals as useful and the main feature that is why they feel them to be useful is that e-journals provide timely access (71.05%). The other features for this opinion are their searching capabilities (40.79%), remote access (25%), multimedia facilities (21.05%), hyper linking (18.42%) and some other feature like ease of use, downloading facility, etc. (7.89%).

5.2.7 Table 4.10 makes us conclude that PDF is the most preferred format for reading e-journal articles by the medical PGs in AMU (80.56%).

5.2.8 It was found that most of the medical PG students search e-journal articles through search engines (65.28%). They also search through PubMed's multi-

journal website (30.56%), specific journal's website (16.67%) and other multi-journal websites (15.28%). Most of them (61.11%) search articles using keywords. Some of them (26.39%) search by journal's title, and a minority of 8.33% and 4.17% search by article title and author's name respectively. (From Table 4.13 and Table 4.14).

5.2.9 After locating an e-journal, majority of the PG students scan the latest issues(44.44%). Some of them (37.50%) search specific articles needed and the others (18.06%) scan table of contents of all issues.

5.2.10 The analyzed data of the present survey reveals that the majority of the medical PGs are not aware of e-journal consortia in the field of medicine. Yet they use others subscribed by the University. UGC-INFONET is the mostly used consortium (40.78%) followed by J-Gate consortium. None of them use CSIR and HELINET consortia. (Table 4.16 and Table 4.17).

5.2.11 PubMed is the mostly used e-journal database among the medical PGs. 93.06% use it, followed by MEDLINE (41.67%), NIC MEDLARS Center (25%) and ADONIS (2.78%). (From Table 4.18).

5.2.12 The present study found that most of the PG students in the Faculty of Medicine are aware of e-journals provided by the Medical College Library to their subject of specialization (Table 4.21). But most of them are not satisfied by the library's service as 68.06% of the students feel that all important e-journals they would like to access are not provided by the library (Table 4.22).

5.2.13 Table 4.24 reveals that though most of the PGs consider e-journals as useful, they have some objections also to them. The main objection is the need of internet connection to access them given by 62.50%. The other objections are, they have to be read on the screen (34.72%), need to take print out of articles (22.22%), lack of ability to browse (9.72%).

5.2.14 The study also found that the students face many problems while accessing e-journals such as limited number of access terminals (47.22%), slow speed (36.11%), internet connectivity (33.33%), and lack of training (27.78%).

5.2.15 Another important finding of the study is that most of the PG students in the Faculty of Medicine need user training to make maximum use of e-journals.

5.3. TENABILITY OF HYPOTHESES

HYPOTHESIS-I

"Most of the PG students in the Faculty of Medicine in AMU are aware of e-journals."

The analysis of the collected data reveals that most of the PG students in the Faculty of Medicine in AMU are aware of e-journals.

So this hypothesis is proved to be a true hypothesis.

HYPOTHESES-II

"Most of the PG students in the Faculty of Medicine access e-journals in the Medical College Library."

The present study reveals that the majority of PG students (53.95%) access e-journals in the Medical College Library.

So this hypothesis is also a true hypothesis.

HYPOTHESES-III

"Most of the PG students are satisfied with the e-journal service provided by the Medical College Library"

It is clear from the Table 4.22 that most of the students (68.06%) feel that the Medical College Library does not provide access to all important e-journals they would like to access and thus they are not fully satisfied with the e-journal service of the library.

So this hypothesis is proved to be a null hypothesis.

HYPOTHESES-IV

"Most of the medical PG students face problems while accessing e-journals."

The study finds that most of the PG students in the Faculty of Medicine (88.89%) face many problems while accessing e-journals.

So this hypothesis is proved fully true.

HYPOTHESES-V

"Most of the PG students are aware of some e-journal consortia in the field of Medicine."

Table 4.16 clearly indicates that more than half of the total respondents (54.17%) are not aware of e-journal consortia in medicine.

So this hypothesis is a null hypothesis.

5.4 SUGGESTIONS

Based on the results and opinions of the respondents, the present study suggests the following:

5.4.1 To provide the e-journal service effectively and efficiently, more number of access terminals should be installed in the Medical College Library as well as in the departmental computer laboratories.

5.4.2 To save the precious time of the PG students in the Faculty of Medicine, high speed internet connection should be provided.

5.4.3 For the proper exploitation of the e-journal services, library should appoint adequate number of well-trained staff in the e-journal labs.

5.4.4 The library should introduce orientation and user training programs to the students, preferably at the start of every academic session.

5.4.5 Proper feedback system should be introduced to know about various problems faced by the students and to solve them effectively.

5.4.6 The e-journal labs in the library and departments should provide printing facility to the students free of cost or at a nominal cost.

5.4.7 The Medical College Library should provide the list of e-journals, which can be accessed in the library, to various departments of studies showing the titles which are of interest of the students of the department.

5.4.8 More number of e-journals should be subscribed by the library in the fields of specialization, where only small numbers of e-journals are being subscribed.

5.4.9 Students should be provided with the correct login and passwords of e-journals and e-journal consortia being subscribed.

5.4.10 E-journals having higher impact factor should be subscribed.

5.4.11 To increase the usage of e-journals by the PG students in the Faculty of Medicine, who are always busy with patient-care in OPD , 24 hour internet connectivity should be provided or increase the timing of the labs till late night so that they can access e-journals after clinics/OPD.

5.4.12 The Faculty library should organize regular workshops to enhance the usage of e-journals.

5.4.13 The 'Online Journal Lab' in the Maulana Azad Library should be open to the postgraduate students as well.

5.5. RECOMMENDATIONS OF THE STUDY

- Surveys may be conducted to find out the use of e-journals in other faculties of AMU also, not only by the student but of the Research scholars and Faculty members also.
- Comparative study can be conducted on the use of e-journals by the users in related departments of studies or faculties in AMU.
- Surveys can be conducted on not only the use of e-journals, but also on the use of other e-resources such as e-books, e-databases, CD-ROMs, etc.
- Surveys can be conducted in various other universities or higher educational institutions in the country.

Appendices

APPENDIX I

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APPENDIX II

LIST OF E-JOURNALS SUBSCRIBED BY MEDICAL COLLEGE LIBRARY

A number of e-journals in the field of bio-medical sciences can be accessed by the users of the medical college Library. It includes hundreds of free online journals and many e-journals subscribed by the university. Important e-journals subscribed are listed below.

SI. No.	Name of e-journals
1.	Acta Tropica
2.	Acute Pain
3.	American Journal of Cardiology
4.	American Journal of Emergency Medicine
5.	American Journal of Ophthalmology
6.	American Journal of Otolaryngology
7.	American Journal of Preventive Medicine
8.	American Journal of Surgery
9.	Anesthesia
10.	Annals of Anatomy
11.	Annual Review of Immunology
12.	Annual Review of Microbiology
13.	Applied Microbiology and Biotechnology
14.	Archives of Medical Research
15.	Archives of Orthopedics and Trauma Surgery
16.	Arthroskopie
17.	Asian Journal of Surgery
18.	Bone
19.	British Journal of Anaesthesia
20.	British Journal of Anaesthetic and Recovering Nursing
21.	Cancer Detection and Prevention
22.	Clinical Microbiology Newsletter

Sl. No.	Name of e-journals
23.	Clinical Neurology and Neurosurgery
24.	Continuing Education in Anaesthesia, Critical Care and Pain
25.	Critical Care Medicine
26.	Current Anaesthesia and Critical Care
27.	Current Opinion in Biotechnology
28.	Current Opinion in Microbiology
29.	Current Orthopaedics
30.	Der Schmerz
31.	European Journal of Anaesthesiology
32.	European Surgery: Acta Chirurgica Austriaca
33.	Human Fertility
34.	Immunity
35.	Immunological Investigations
36.	Immunome Research
37.	Indian Journal of Medical Microbiology
38.	Indian Journal of Medical Research
39.	Indian Journal of Ophthalmology
40.	Indian Journal of Otolaryngology and Head and Neck Surgery
41.	Indian Journal of Physiology and Pharmacology
42.	International Immunology
43.	International Journal of Astrobiology
44.	International Journal of Epidemiology
45.	International Journal of Molecular Sciences
46.	International Microbiology
47.	Internet Journal of Neromonitoring
48.	Internet Journal of Veterinary Medicine
49.	Italian Heart Journal
50.	Japanese Journal of Clinical Immunology
52.	Japanese Journal of Clinical Oncology

SI. No.	Name of e-journals
53.	Japanese Journal of Medical Mycology
54.	Journal of Anaesthesia
55.	Journal of Clinical Immunology
56.	Journal of Clinical Investigations
57.	Journal of Dentistry
59.	Journal of Headache and Pain
60.	Journal of Hepatology
61.	Journal of Hospital Infection
62.	Journal of Oral and Maxillofacial Surgery
63.	Journal of Parasitology
64.	Journal of Prosthodontics: Implant, Esthetic, and Reconstructive Dentistry
65.	Journal of Receptor and Signal Transduction
66.	Langenbeck's Archives of Surgery
67.	Molecular Cell
68.	Pain Clinic
69.	Pain Practice
70.	Plant Cell
71.	Plant and Cell Physiology
72.	Preventive Medicine
73.	Primary Care Diabetes
74.	Thai Journal of Physiological Sciences
75.	Trends in Cell Biology
76.	Trends in Molecular Medicine
77.	Trends in Parasitology
78.	Urology
79.	Veterinary Journal of Anaesthesia and Analgesia
80.	Virology Journal
81.	Virus Genes

APPENDIX III
QUESTIONNAIRE

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE
ALIGARH MUSLIM UNIVERSITY, ALIGARH

Dear Friends,

I am a student of MLISc in the Department of Library and Information Science, AMU. I am conducting a survey on the topic "**Use of e-journals by the PG students in the Faculty of Medicine, AMU, Aligarh**" for my MLISc dissertation work under the supervision of Syed Mustafa K. Q. Zaidi, Reader, Deptt. of Lib. & Info. Science, AMU.

I request to you to fill up this questionnaire and give your valuable suggestions in the space provided. Information provided by you will be kept confidential. I shall be highly thankful to you.

Yours sincerely
Salahudheen.E
(MLISc.)

Questionnaire for PG students

(Please fill the information in the blank space or put a tick mark in the square bracket. **You can give multiple answers also for a question, if any.**)

Personal Details:-

a. Name: .....
b. Course: .....
c. Faculty: .....
d. Department: .....

1. Are you aware of electronic journals (e-journals)?
   (a) Yes [ ] (b) No [ ]

2. Which is the source which gives you information about e-journals?
   (a) Print journals [ ] (b) Colleagues [ ]
   (c) Internet [ ] (d) Others ..... (Please specify)

3. Do you access e-journals?
   (a) Yes [ ] (b) No [ ]

4. If yes, the place from where you access e-journals.
   (a) Maulana Azad Library [ ] (b) Medical College Library [ ]
   (c) Departmental lab [ ] (d) University Computer Center [ ]
   (e) Others ..... (Please specify)

5. Do you personally subscribe to any e-journal in your subject?
   (a) Yes [ ] (b) No [ ]

6. How often do you use e-journals?
   (a) Daily [ ] (b) Once in a week [ ]
   (c) Twice in a week [ ] (d) Rarely [ ]
   (e) Others ..... (Please specify)

7. What is your experience with the following e-journals features?

	Useful	Not useful	Never heard of it	Would like to try it
a) Video or animated graphics.				
b) Links from one article to a cited article in the same journal.				
c) Links from one article to a cited article in a different journal at no charge.				
d) Links from one article to a database in your subject.				
e) Links from one article to the author's e-mail address				

8. How problematic are the following issues with e-journals?

	Big problem	Minor nuisance	Not a problem
a. Videos play slowly.			
b. Articles in PDF format load slowly.			
c. Pictures in HTML format load slowly.			
d. e-journal does not provide links to cited articles.			

9. E-journals are useful because they,
   (a) Provide timely access [ ] (b) Support searching capabilities [ ]
   (c) Allow remote access [ ] (d) Provide link to related articles [ ]
   (e) Have multimedia facilities [ ] (f) Others .....

10. What is your most preferred format for reading full text e-journal articles?
    (a) HTML [ ] (b) PDF [ ]

11. How do you rate yourself in accessing e-journals?
    (a) Beginner [ ] (b) Moderate [ ]
    (c) Expert [ ]

12. What is your main purpose of using e-journals?
    (a) To update knowledge [ ] (b) For study [ ]
    (c) To prepare assignments [ ] (d) Others ..... (Please specify)

13. How do you usually search and access articles on e-journals?
    (a) Through a general purpose search engine (e.g.: Yahoo, Google, etc.) [ ]
    (b) Through a specific journals' website [ ]
    (c) Through PubMed's multi-journal search website [ ]
    (d) Through other multi-journal search websites (e.g. Medline, etc.) [ ]

14. When you are searching for articles, you usually search by,
    (a) Keyword [ ] (b) Author [ ]
    (c) Article's title [ ] (d) Journal's title [ ]

15. Once you locate e-journals, how do you use them?
    (a) Search for specific cited articles [ ]
    (b) Scan latest issues of articles [ ]
    (c) Scan table of contents of issues [ ]

16. Are you aware of any e-journals consortium in your subject?
    (a) Yes [ ] (b) No [ ]

17. Which e-journal consortium do you use?
    (a) UGC-INFONET [ ] (b) CSIR consortium [ ]
    (c) HELINET consortium [ ] (d) J-Gate Consortium [ ]

18. Which e-journal database do you use?
    (a) PUBMED [ ] (b) MEDLINE [ ]
    (c) NIC MEDLARS Center [ ] (d) ADONIS [ ]

19. Name some full text e-journals you access.
    (a) .....
    (b) .....
    (c) .....
    (d) .....

20. How do you read full text e-journals?
    (a) On the screen [ ] (b) Taking print-out [ ]
    (c) Downloading on disc [ ] (d) Other methods [ ]

21. What percentage of e-journal content do you include in your study?
    (a) Less than 25% [ ] (b) 25 - 50% [ ]
    (c) 50 - 75% [ ] (d) More than 75% [ ]

22. Are you aware of the e-journals provided by the Medical College Library related to your discipline?
(a) Yes [ ] (b) No [ ]

23. Does Medical College Library has all the e-journals you would like?
(a) Yes [ ] (b) No [ ]

24. How do you rate the information content of e-journals you access?
(a) Most helpful [ ] (b) Helpful [ ]
(c) Least helpful [ ] (d) Not helpful at all [ ]

25. What are your objections to e-journals?
(a) Having to read on screen [ ] (b) Need to take print-outs [ ]
(c) Lack of ability to browse [ ] (d) Need for internet connection [ ]
(e) Others ..... (Pls. specify)

26. Do you face any problem in accessing e-journals?
(a) Yes [ ] (b) No [ ]

27. If yes, which type of problem do you face?
(a) Internet connectivity [ ] (b) Slow speed [ ]
(c) Limited access terminals [ ] (d) Lack of training [ ]
(e) Others ..... (Please specify)

28. Do you think user training is required for better usage of e-journals?
(a) Yes [ ] (b) No [ ]

29. Please give your valuable suggestions to improve e-journal service in Medical College Library/ Maulana Azad Library.
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Thanks.